Use of Improved Protective Coating At Pipeline Canal Crossings

NaturalGas EPA POLLUTION PREVENTER

Partner Reported Opportunities (PROs) for Reducing Methane Emissions

PRO Fact Sheet No. 406

Applicable sector(s):

■ Production ■ Processing ■ Transmission and Distribution

Partners reporting this PRO: Texaco (now ChevronTexaco Corporation)

Other related PROs: Inspect Flowlines Annually, Use Clock Spring® Repair, Use Ultrasound to Identify Leaks

Compressors/Engines	☐
Dehydrators	☐
Pipelines	■
Pneumatics/Controls	☐
Tanks	☐
Valves	☐
Wells	☐
Other	☐

Technology/Practice Overview

Description

Cross-country pipelines are normally wrapped in a protective coating and buried in the ground. Where these pipelines cross over waterways, they are normally suspended on a pipeline bridge, and externally coated with a corrosion protective paint. Deterioration of the protective paint coating from solar and particularly marine environments can result in external corrosion and leaks that are difficult to find and repair.

A partner reports using PRITEC®, which is an improved protective coating made of a mixture of butyl adhesive and polyethylene that is applied hot. This coating withstands exposure to weather and ultraviolet radiation for prolonged periods without degradation.

Operating Requirements

Suitable for gas temperatures between -40 °F and 180°F.

Applicability

This practice applies to all new, bare metal pipe materials and existing pipe that is sandblasted clean.

Methane Savings: 44 Mcf per year

Costs

Capital Costs (including installation)

☐ <$1,000 ☐ $1,000 – $10,000 ■ >$10,000

Operating and Maintenance Costs (annual)

■ <$100 ☐ $100-$1,000 ☐ >$1,000

Payback (Years)

☐ 0–1 ☐ 1–3 ☐ 3–10 ■ >10

Benefits

Reducing methane emissions was an associated benefit of the project.

Methane Emissions Reductions

Methane emissions reductions may be estimated using 43,705 scf per leak per year in unprotected-steel gas gathering pipe from the EPA/GRI study “Methane Emissions from the Natural Gas Industry,” Volume 3, Appendix A, Section P-3. One partner has reported natural gas emissions reductions of 25 Mcf per leak per year for 26 crossings.

Economic Analysis

Basis for Costs and Savings

The savings of 44 Mcf per year are based on preventing one leak per year in every 30-canal crossings, 1/3 mile each, of unprotected steel.

Discussion

The primary benefits of this technology are to increase pipeline safety and reduce emergency repair costs. An associated benefit is to save natural gas. The capital cost assumes applying the coating materials on new pipe. The coating material cost is about $0.70 per ft^3.